

Application No. 10/049,270
Reply to Office Action of November 5, 2007

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 5C. This sheet, which includes Fig. 5C, replaces the original sheet including Fig. 5C.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 9, 32, 34, 36, 39 and 40 are presently pending in this application, Claims 9 and 36, the specification and drawings having been amended by way of the present amendment.

In the outstanding Office Action, Claims 9 and 36 were rejected under 35 U.S.C. §102(e) as being anticipated by Iwasaki et al. (U.S. Patent 6,447,038). However, Claims 32, 34, 39 and 40 were indicated as allowed.

First, Applicants acknowledge with appreciation the indication that Claims 32, 34, 39 and 40 have been allowed. However, regarding Claims 9 and 36, Applicants believe that Claims 9 and 36 as currently amended include allowable subject matter as discussed below.

In addition, Applicants wish to thank Examiner Dinh for the April 3, 2008 interview at which time the outstanding issues were discussed. During the interview, Applicants presented amendments and arguments substantially as indicated in this response. Examiner Dinh indicated that such amendments and arguments would overcome the rejection based on Iwasaki et al., but a Request for Continued Examination (RCE) would be required to enable further search and consideration before a decision on alloability of the claims could be made. An RCE is filed herewith.

Turning now to the merits, in order to expedite issuance of a patent in this case, Applicants have amended Claims 9 and 36 to clarify the patentable features over the cited references. Specifically, Claim 9, as amended, recites a multilayered printed circuit board including a conductor circuit and a resin insulating layer serially formed on a substrate in an alternate fashion and in repetition, and a solder resist layer formed as an outermost layer. The solder resist layer contains an elastomer component provided within at least one resin selected from the group consisting of a thermoplastic resin and a thermosetting resin, and the

elastomer component is separated in micro-phase as to form an island-in-sea structure after curing in the solder resist layer.

Thus, as discussed in the April 3rd interview Applicants' amended Claim 9 recites that the "elastomer component is *provided within* the at least one resin ... and the elastomer component is *separated in micro-phase so as to form an island-in-sea structure.*" Claim 36 has also been amended to include this feature. As discussed in Applicants' specification, "island-in-sea" structure means a state where the elastomer component exists like islands dispersed in the sea of the solder resist composition other than the elastomer component, and this structure can minimize cracking and peeling caused by stresses to the multilayer printed circuit board.¹

Iwasaki et al. is directed to an electronic appliance having a printed wiring board that includes an insect repellant so as to prevent insects from nesting within the electronic appliance. As seen in FIG. 2 of Iwasaki et al., the printed circuit board includes an insulating resin layer 12 and a solder resist layer 8b thereon, the solder resist 8b containing a repellent such as pyrethroid and other neurotransmitters.² In one embodiment, the insulating resin layer 12 can include a filler adsorbing the repellant, a thermosetting resin and a hardner. As seen in FIG. 2, however, the insulating resin layer 12 and a solder resist layer 8b are *discrete layers* from each other. This is also clear from the specification of Iwasaki et al., which states,

The insulating resin layer 12 as electronic material and the conductor circuit 7 are laminated in layers on one side of the multilayered printed wiring board 3a by build-up lamination method such as additive method. The insulating layer resin 12 includes a filler adsorbing the repellant, a thermosetting resin and a hardner. That is, the insulating resin layer contains the repellant... the resist 8b is formed on the entire surface except for the positions of soldering land and contact pattern 13.³

¹ Applicants' specification at page 16, lines 1-8.

² Iwasaki et al., column 7, line 11, to column 9, line 31.

³ Iwasaki et al., at col. 7, lines 1-16.

This discussion of laminating the layers makes clear that the insulating resin layer 12 and a solder resist layer 8b are discrete layers. As pointed out by the Office Action, the above section of Iwasaki et al. discloses that the insulating resin layer 12 can include the repellent. However, as discussed in the April 3rd interview, this does not cause the discrete insulating resin layer 12 and a solder resist layer 8b to meet the limitation of an “elastomer component is **provided within** the at least one resin . . . and the elastomer component is **separated in micro-phase so as to form an island-in-sea structure**” as now recited in Claims 9 and 36. Iwasaki et al. does not disclose the island-in-sea structure clarified in the claims. Therefore, the subject matter recited in Claims 9 and 36 is believed to be clearly distinguishable from Iwasaki et al. and thus is neither anticipated by nor rendered obvious over Iwasaki et al.

In addition, in response to Examiner Dinh’s comment in the April 3rd interview that the figures may be objectionable if they do not clearly show the island-in-sea structure, Applicants have also amended FIG. 5C to show this structure within a detailed view of solder resist layer 14. In addition, the specification has been amended to refer to FIG. 5C in describing this structure. The detailed view of solder resist layer 14 now provided in FIG. 5C is supported at least by Applicants’ specification at page 16, lines 1-8. Therefore, the amendment to the drawings and specification do not raise an issue of new matter.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in this application, and the present application is believed to be in condition for formal allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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